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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicants: Oliver, et al.

Serial No.:   09/036,236

Filed: March 6, 1998

For: SYSTEM FOR MANAGEMENT OF TRANSACTIONS ON
              NETWORKS

Examiner: F. Thompson, Jr.

Art Unit: 2765

December 22, 2002

Hon. Commissioner of Patents and
    Trademarks
Washington, DC 20231

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Dear Sir:
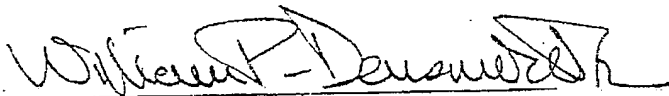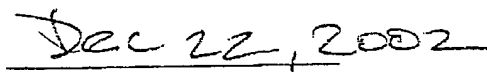
GROUP 3600

DECLARATION

I, William P. Densmore Jr., do hereby declare:

1.   I am a named inventor of the above patent application.

2.   I submit this declaration in support of a demonstration of a prima facie

entitlement to priority of invention with respect to Teper, US 5,815,665, the claims of

which have been copied in the present application.

3.   Attached is a memo drafted in 1995 by David Oliver, one of the named

inventors herein, which was contemporaneously transmitted during 1995 and thereafter to

a number of independent third parties, subject to non-disclosure agreement.

4.   This memo clearly demonstrates that present applicants were in possession

of the invention claimed in US 5,815,665 before the filing date thereof.
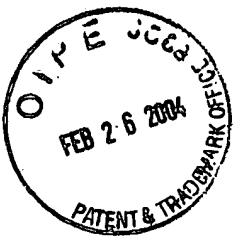
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Further Declarant Sayeth Not.

I hereby declare that all statements made herein of my/our own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

_____
William P. Densmore Jr.

Dec 22, 2002
_____
Date

File: c:\ftp\12-31-02.ark\122002.WD.dec

TECHNICAL CONCEPT
AND OPERATIONS

The Newshare Token Validation System (TVS)

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The need for TVS

It is widely acknowledged that high quality Internet information content can
not remain free forever. The Internet needs to offer an economic incentive
to information authors if it is to be successful as an open-system
alternative to the proprietary services.

Newshare has developed a model for placing value on content items, making
sure that only "billable customers" use this valued content, and assuring
that the value finds its way back to the content "owner". The short
description below does not dwell on the billing "back end" of this model,
which can be handed off to a transaction-billing facility with is standard to
telecommunications, banking and credit-card processing. Rather, we focus on
our method of handling paying customers when they show up on the doorstep of
a Newshare Publishing Member something that, until Newshare, has been largely
"unsolved" in the Internet's distributed-service environment.

Describing the problem
Some forms of information content have easy-to-acknowledge value to any and
every reader -- stock quotations, for example
-- and it is therefore easy to develop a stable pricing structure for these
services. Also, such services are often operated by a "single shop" so it is
easy to develop a connection model of service into that one shop.

However, a large amount of time-sensitive information ("news") is not so
simply structured. A large fraction of this content has very high value to a
relatively small audience and a low value the rest of the world. Which
content has value (and when) is a shifting target. Further, time-sensitive
content is distributed around many autonomous providers ("many shops") --
most of whom are vigorously independent.

The current models of presentation, billing and value structuring in the on-
line service industry do not align well with the demands of the time-
sensitive information business.
        -- All content providers who want to take advantage of the on-line
service must move their content to computers hosted by the service.

        -- Each service has specific and established information presentation
techniques that need to be adhered to.

        -- The matter of compensation for use of content is negotiated between
content provider and service, not with the users themselves.

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-- It is the service that maintains the relationship with the user, not the content provider.

Users of the proprietary-network online services (Prodigy, AOL, Compuserve, etc.) enjoy the convenience of a single bill for an array of information resources. On the Internet, will users have to maintain tens, hundreds or potentially thousands of relationships with content providers simply to get the news they want?

For the Internet is to replace proprietary networks as a standardized medium for value-assigned information exchange, a facility must exist to enable a similar "one bill" consumer relationship -- without the adoption of proprietary encryption, non-standard software browsers or exclusive E-cash efforts. This is the technical "solution" is offered by Newshare's TVS.

The Newshare solution

The costs and benefits of on-line services and the Internet suggest a model that respects both the user and the content provider. Such a model would give the content provider independence and a direct relationship with customers, but somehow allow such providers to cooperate on matters of billing and value sharing.

Newshare is implementing such a model using software that allows for the distributed validation of customers as well as presentation of preference information at validation time. A key feature of this software is that the user needs to validate himself only once at the start of a "session". For then on, his "credentials" are presented automatically when he requests information from any provider in the Newshare universe. The advantage, of course, is that this allows "seemless" access to the universe of content providers within Newshare without the constant need to present identification. In the Newshare model, each customer maintains an account relationship with only one Newshare content provider, even though access is "global". This simplifies the relationship for the user, while still making knowledge about the user available throughout the system.

No modification to browser softwarey

We call this software the Token Validation System (TVS) because it is based on a validation-token scheme. This scheme is implemented within the framework of the definition of the Hypertext Markup Language (HTML) standard used on the Internet's World Wide Web. It is implemented in such a way that current HTML client programs, such as NCSA Mosaic, do not require modification. The implementation is all "server side", so that the only software component modified is the HyperText Transfer Protocol (HTTP) server program which is used by Newshare content providers (called "Publishing Members" or PMs).

Newshare's primary business is to enable local content transfer for value on a charge-per-page basis. While TVS is an important component of our business concept, our server software is really just a vehicle to make the broader concept happen in a way that benefits everyone. Newshare does not seek to lock customers into specific server features and then ramp up the cost of that software. TVS, and the modifications to the HTTP server, are enabling tools which will be provided at nominal cost as part of a larger system of

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Newshare Publishing Membership or Technical Membership. This philosophy
distinguishes Newshare from browser vendors selling only server software who
are attempting to lock up market segments with features that force customers
into a single vendor. TVS is being implemented on a free server platform in a
manner that makes it easy to port to other servers if/when required.

Newshare servers provide "validation"

TVS is implemented in manner that is rather canonical in the open network
environment. TVS is a service provided by a set of TVS server machines
operated by Newshare Corporation. The HTTP server programs running on
hardware provided by the Publishing Members contact the TVS servers for user
validation support.

Here is the general notion of a user session: John decides to read the news
after work. He opens a session with his "home" Publishing Member using World
Wide Web software of his own selection (and internet service support of his
selection, too). He opens this session by requesting his own "homepage" at
the
PM's Web site.   This causes the PM's HTTP server to request an
authentication. Either clear password, or S-key or other software can be
used here to obtain an authentication -- this part is independent of TVS.

Once an authentication is obtained, the PM's HTTP server contacts a Newshare
TVS server to obtain a fresh validation token for John (specifically, for
this session by John). Then the server returns to John his "homepage".
However, in the process of returning the page, all the Uniform Resource
Locators (URLs) -- linking this page to other information at the PM's site or
anywhere within the Newshare universe -- are "tagged" with the special TVS
token. Thus, when John selects any URL to obtain more information, the token
is presented along with the specific information request. The HTTP server
that John subsequently contacts now uses TVS to make sure the data token
presented from John is valid. To do so, the HTTP server sends a "request
validation" packet containing the data token to a Newshare TVS server. TVS
returns either a failure packet, or a success packet which contains an
identification of our user John and some information about his preferences
(also usage restrictions and approvals). The HTTP server is then free to
serve the request (return to him the information he requested).

The HTTP server contacted then logs his request both locally and over the
network to Newshare with the information contained in the token and in the
request.

It is Newshare's intention to maintain redundant authorization servers in
strategic locations around the Internet backbone to speed the validation
process and provide fault tolerance.

Token process invisible to user

An important point, of course, is that World Wide Web client software "hides"
the URL from user view -- coding it into the page in the canonical HTML
manner. John never sees the TVS token, and never sees the background process
of validation that occurs at every information request.

Non-Newshare resources not blocked

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Another point is that URLs "outside" the Newshare universe are not tagged with the Newshare TVS token. Thus, a PM can feel free to link to any content on any HTTP server -- whether free or chargable by some other method besides TVS -- without fear of having the request misunderstood or blocked.

Time limit on "token" validity

By the way, what's a session (many of you know that the World Wide Web is not session-oriented at all)? TVS puts a time limit of the validity of all tokens it hands out. This time limit is variable and designated by the HTTP server when it requests a new TVS token. However, the session is, in fact, time based -- the length determined by the time limit. So, it is possible that during a very long session, the user's token will "time out". In this case, the user is simply directed back to his "homepage PM" for re-authentication. However, it is possible to then regenerate the information request that was inhibited by the timeout, in a manner that causes a minimal interruption of use.

Why TVS is best

What distinguishes TVS from other schemes intended for transaction authentication?

1. Simple implementation, invisible to user. TVS is "lightweight" and out of the customer's view. The customer "truly authenticates" himself only once for each session - typically when he first requests his "homepage" from his "home" Publishing Member. Several client-independent methods of authentication are now available to assure that this process is valid. The TVS software comes into play only after such an assurance is obtained. TVS provides a way for this true authentication to be provided elsewhere within the Newshare universe without constant "re-assurance" directly from the user. Newshare feels that only such a "lightweight" model fits in the time-sensitive information business where content length, value, and timeliness vary so dramatically from provider-to-provider and user-to-user.

2. Not a vehicle for so-called "secure (E-cash) transactions". Newshare fully recognizes the need for such services within the Internet to provide reliable "purchase- oriented" functions, and in fact, TVS does not inhibit such transactions from taking place. Nor does it "invalidate" transaction assurance software (at least none of the variety we have seen). TVS addresses the need to have "known customers" viewing copyrighted, valued information content and services. It does so in a manner that enables "browsing" for such content and services, not restricting it (it is widely cited that when users are asked to validate and monitor the cost of very tiny infromation transactions, they simply limit or curtail their browsing).

3. Enables transfer of user preferences. TVS is as much about user service as about user validation. This is because TVS transfers information about customer content-viewing preferences among all Newshare Publishing Members. This allows one of the benefits of a direct customer relationship (knowledge of user preferences) to be shared in a manner that benefits both customer and provider equally. Currently discussed secure-transaction does not address this requirement at all.

4. Scalability based on existing protocols. TVS is designed to be very "scalable" as the demand for token validation increases (either through growth in the number of Publishing Members or growth in the number of users).

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TVS is based on a distributed service concept similar to Internet "name service". However, no single "master" token server will exist -- service is distributed among a set of peer servers who may cooperate to provide their service.

5. Third-party validation and tracking. TVS does share a common feature with distributed privacy software in that TVS is a service provided by a "neutral third party". This has the direct benefit of allowing each Publishing Member to have a single reliable partner in validating users. More importantly, probably, the third party is necessary in the process of "settling accounts" among Publishing Members. This is necessary because Newshare's content valuation model allows for compensation to both the provider of information and to the Publishing Member who "forwarded" the customer to the content provider's door. In addition, this third party model provides an ideal avenue for obtaining "market research" type information about Newshare usage for advertisers.

6. Privacy option built in. While tracking is of interest to advertisers, it is of equal concern to some users who are concerned about their privacy. Already built into TVS is the ability for the user or Publishing Member to "turn off" this type of data generation when requests are made. We feel this "user choice" model responds directly to the current-term negativism toward "background data sharing" on the part of manufacturers and service providers.

Technical Limitations

Working completely within the framework on current standards is a part of Newshare's strong commitment to an open environment for both content providers and users. However, it restricts the avenues of opportunity in some regards and provides technical hurdles in others.

Specifically, it is not currently possible to guarantee the identity of the sending host when a TCP/IP connection is initiated (the HTTP protocol resides atop TCP/IP in the network protocol stack). Though attempts are now underway to rectify this situation, TVS in its early releases will have to recognize that this situation exists and allow only one valid token per IP host address. That is, only one active session can originate from a given IP address (each machine connected to the Internet has one address per network interface,
excluding multicast addresses and broadcasts). Newshare will
closely monitor the industry's efforts to provide additional security in identifying network-layer connection issues. Secondly, Newshare URLs that are saved on "hotlists" or other "memory" devices (e.g., personal databases) will inevitably become "stale" if they contain a TVS token. Therefore, when a user attempts to link to an old URL, the user will have to be "re-validated" (because the token attached to the URL is currently invalid). There are several avenues to address this limit, some requiring changes (or actually "enhancements") to the Web client software. Newshare is also looking at enhancements to TVS itself that recognize and correct this early-stage deficiency. This is an operational issue which does not alone merit a redesign of Web client software. Moreover, it is increasingly common for Internet users to "cache" their browsing preferences to a server-based home page rather than a local set of hotlinks. When this is done, the TVS server software will "refresh" those links with a new token at each session.